

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A NO_x removal catalyst management unit ~~for use with a NO_x removal apparatus, the management unit being provided for managing a plurality of NO_x removal catalyst layers provided in a flue gas NO_x removal apparatus, characterized in that the management unit comprises comprising:~~

a NO_x measurement means for determining NO_x concentrations on the inlet and outlet sides of respective NO_x removal catalyst layers;

a NH₃ measurement means for determining NH₃ concentrations on the inlet and outlet sides of the same NO_x removal catalyst layers; and

a percent NO_x removal determination means for determining percent NO_x removal (η) on the basis of an inlet mole ratio (i.e., inlet NH₃/inlet NO_x), which percent NO_x removal (η) is determined on the basis of the following equation (1):

$$\eta = \left(\frac{(inlet\ NH_3 - outlet\ NH_3)}{(inlet\ NH_3 - outlet\ NH_3 + outlet\ NO_x)} \right) \times 100 \times \frac{evaluation\ mole\ ratio}{inlet\ mole\ ratio} \quad (1)$$

wherein:

the inlet mole ratio ~~being~~ is derived from a ~~NO_x concentration which is~~ a NO_x concentration as measured on the inlet side by means of said NO_x measurement means and an

~~NH₃ concentration which is an~~ NH₃ concentration as measured on the inlet side by means of said NH₃ measurement means;

~~an~~the inlet NH₃ concentration ~~which is an~~ NH₃ concentration as measured on the inlet side;

~~an~~the outlet NH₃ concentration ~~which is an~~ NH₃ concentration as measured on the outlet side;

~~a~~the outlet NO_x concentration ~~which is a~~ NO_x concentration as measured on the outlet side; and

~~an~~the evaluation mole ratio ~~which is~~ predetermined for the purpose of evaluating respective NO_x removal catalyst layers or plurality of NO_x catalyst layers, ~~wherein the percent NO_x removal (η) is determined on the basis of the following equation (1):~~

$$\eta = \frac{(\text{inlet NH}_3 - \text{outlet NH}_3)}{(\text{inlet NH}_3 - \text{outlet NH}_3 + \text{outlet NO}_x)} \times 100 \times (\text{evaluation mole ratio/inlet mole ratio}) \quad (1).$$

2. (canceled).

3. (canceled).

4. (currently amended): A NO_x removal catalyst management unit according to claim 1 ~~for use with a NO_x removal apparatus~~, which management unit further includes transmission means for transmitting concentration values determined by the NO_x measurement means and the NH₃ measurement means to the percent NO_x removal determination means, wherein the percent

NO_x removal determination means determines the percent NO_x removal (η) of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses.

5. (currently amended): A method for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus, the method being provided for managing a plurality of NO_x removal catalyst layers provided in a flue gas NO_x removal apparatus, characterized in that the method comprises comprising:~~

determining NO_x concentrations and NH₃ concentrations on the inlet and outlet sides of respective NO_x removal catalyst layers;

determining percent NO_x removal (η) on the basis of an inlet mole ratio (i.e., inlet NH₃/inlet NO_x); ~~which percent NO_x removal (η) is determined on the basis of the following equation (1):~~

$$\eta = \left(\frac{(inlet\ NH_3 - outlet\ NH_3)}{(inlet\ NH_3 - outlet\ NH_3 + outlet\ NO_x)} \right) \times 100 \times \frac{evaluation\ mole\ ratio}{inlet\ mole\ ratio} \quad (1)$$

wherein:

~~an the inlet NH₃ concentration which is an NH₃ concentration as measured on the inlet side;~~

~~an the outlet NH₃ concentration which is an NH₃ concentration as measured on the outlet side;~~

~~a the outlet NO_x concentration which is a NO_x concentration as measured on the outlet side:;~~

the inlet mole ratio is derived from a NO_x concentration as measured on the inlet side and an NH₃ concentration as measured on the inlet side; and
an evaluation mole ratio which is predetermined for the purpose of evaluating respective NO_x removal catalyst layers or plurality of NO_x catalyst layers; and
evaluating performance of respective NO_x removal catalyst layers on the basis of the percent NO_x removal (η), the inlet mole ratio being derived from a NO_x concentration which is a NO_x concentration as measured on the inlet side and an NH₃ concentration which is an NH₃ concentration as measured on the inlet side; and wherein the percent NO_x removal (η) is determined on the basis of the following equation (1):

$$\eta = \frac{(\text{inlet NH}_3 - \text{outlet NH}_3)}{(\text{inlet NH}_3 + \text{outlet NH}_3 + \text{outlet NO}_x)} \times 100 \times (\text{evaluation mole ratio/inlet mole ratio}) \quad (1)$$

6. (canceled).

7. (canceled).

8. (currently amended): A method according to claim 5 for managing a NO_x removal catalyst for use with a NO_x removal apparatus, wherein the method further comprises performing restoration treatment of a NO_x removal catalyst layer having a catalytic performance deteriorated to a predetermined level, on the basis of results of performance evaluation of the respective NO_x removal catalyst layers.

9. (currently amended): A method according to claim 8 for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus~~, wherein the performance restoration treatment is replacement of the NO_x removal catalyst layer with a new NO_x removal catalyst layer, replacement of the NO_x removal catalyst layer with a regenerated NO_x removal catalyst layer, replacement of the NO_x removal catalyst layer with an NO_x removal catalyst layer inverted with respect to the direction of the flow of discharge gas, or replacement of the NO_x removal catalyst layer with an NO_x removal catalyst layer from which a deteriorated portion has been removed.

10. (currently amended): A method according to any of claims 5 and 8 for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus~~, wherein the method further comprises determining the percent NO_x removal of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses and evaluating catalytic performance of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses.

11. (canceled).

12. (currently amended): A method according to claim 9 for managing a NO_x removal catalyst ~~for use with a NO_x removal apparatus~~, wherein the method further comprises determining the percent NO_x removal of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses and evaluating catalytic performance of respective NO_x removal catalyst layers included in a plurality of flue gas NO_x removal apparatuses.